FEBRUARY, MDCCCLVIII.

# THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CLXXXVII.

LONDON:
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## FIRST-BOOK IN ENTOMOLOGY.

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# THE INSECT HUNTERS:

OR,

## ENTOMOLOGY IN VERSE.

### BY EDWARD NEWMAN.

I have written this little book expressly for those who *are* experience naturalists to place in the hands of those who *are not*. I do not assum any knowledge on the part of the learner, but begin at the beginning and attempt to educate the reader up to the point of understanding th more elaborate and learned Introductions to the Science; indeed, I am not altogether without a hope that some will consider this inexpensiv and unassuming book a sufficient Introduction to the Science.— *Edward Newman.*

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'Look through Nature up to Nature's God,'

renders it a safe and instructive present to the youth of both sexes."—*Greenwich Press.*

London: NEWMAN, 9, Devonshire Street, Bishopsgate; and sold by Mr. VOORST, Paternoster Row; Messrs. W. KENT & Co., Paternoster Row; Mr. BENN 5, Bishopsgate Street; and Mr. STEVENS, 24, Bloomsbury Street.

same manner as the thorax, but less strongly; having a distinct sutural line, and of a pitchy brown or black colour. Abdomen shining black, much dilated towards the apex, especially in the female. Legs pitchy brown; the trochanters and tibiæ more or less rufescent; tarsi testaceous. The male has the hinder edge of the sixth segment beneath slightly excised, and the seventh deeply channelled; the excision and channel smooth and shining. The seventh segment beneath, in the female, a little produced and rounded. Length 1½ line. Fermaire remarks that this species is incorrectly referred to nodifrons in the Stettin 'Catalogue.' Judging from descriptions, it appears to me to differ from that species in being larger, more coarsely punctured, with the abdomen more dilated, and in having the anterior portion of the head smooth and shining. Ten specimens taken beneath *rejectamenta* on the shore of Tain Frith, Ross-shire, September 14, 1857. — *Thomas John Bold; Long Benton, Newcastle-on-Tyne, November* 28, 1857.

*Capture of Læmophlæus Clematidis near Gravesend.*—In June last, when searching the Clematis Vitalba, a few miles below Gravesend, for Tomicus bispinosus, I captured a single individual of an insect unknown to me; but on my showing it to Mr. Janson, who was collecting with me, that gentleman pronounced it Læmophlæus Clematidis, a species new to our British list. He immediately set to work to obtain more, and after nearly two hours' hard labour succeeded in capturing two living and four or five dead specimens. I find that in his paper in the 'Entomologist's Annual' for 1858, on new British Coleoptera, he has omitted all mention of my name when noticing this insect, and, as I am naturally anxious to be recorded with himself as one of the original captors, I am induced to trouble you with this short note. Every one must deplore the unhappy, and I might almost say scurrilous, spirit in which the introductory remarks to his paper are written. Surely Mr. Stainton ought to have exercised his duty as an editor in expunging them. However gratifying to the self-love of the author, they cannot fail to be offensive to the many, and must tend to the disparagement of our science in the eyes of those who hope to pursue its study as a relief from the many cares and strifes of daily life. — *J. S. Baly; Kentish Town, December* 22, 1858.

*Preservation of Colour in Cassidæ.* — On looking lately over some foreign beetles in a bottle of spirits, I found many specimens of a fine Cassida, which had retained their splendid metallic markings, although they had probably been in the spirits several years. When I set some of them, in a few days, all that remained of their former brilliancy were dark markings, something like what you sometimes see in portraits where the artist had freely used white paint. When I took out my drawer containing the English specimens of Cassida nobilis, splendidula, &c., their colour resembled that of a seared leaf; and the thought struck me that their metallic beauty might be preserved by being placed, when freshly captured, in a fluid in one of the glass slides, which contain a well (so called), used for microscopic subjects. I think it would be worth a trial, as the coleopterist would be well repaid, if successful, in having his specimens of Cassidæ preserved in their pristine beauty. — *W. H. L. Walcott;* 11, *Vyvyan Terrace, Clifton, December*, 16, 1857.

*Myrmecophilous Coleoptera captured in the Neighbourhood of Plymouth.*—Thiasophila angulata, *Eric.*, 20 specimens; Dinarda dentata, *Grav.* (new to Britain), 3; Atemeles paradoxus, *Grav.*, 3; A. emarginatus, *Payk.*, 7; Myrmedonia humeralis, *Grav.*, 4; M. funesta, *Grav.*, 6; M. laticollis, *Maerk.*, 10; M. canaliculatus, *Fab.*, common; Oxypoda formiceticola, *Maerk.*, 2; Homolota flavipes, *Eric.*, 5; H. anceps,

BRITISH MUSEUM

*Eric.*, 2; Leptacinus formicetorum, *Maerk.*, 3; Claviger testaceus, *Preyss.*, 4; Monotoma conicicollis, *Aubé*, 10; Amphotis marginata, *Fab.*, 2. Myrmedonia funesta and Amphotis marginata were taken at Darenth Wood, and I am indebted to Dr. Power for the same, for that gentleman took me to one of his favourite nests, where I captured the specimens. Mr. E. W. Janson kindly named my captures.—*J. J. Reading; Plymouth.*

*Occurrence of Chrysomela Banksii in December.*—As a proof of the mildness of the present season it may be worth while to state that I observed this afternoon several specimens of C. Banksii crawling over the grass, and on the walls of Pendennis Castle, near this place. It is an insect, I believe, which is usually more abundant in the autumn than during the summer months; for at Killarney, in the South West of Ireland, I have been accustomed to capture it commonly in September and October; but to find it thus active within almost a week of Christmas day I cannot but regard as most remarkable. Judging, indeed, from the general appearance of vegetation, they would appear to have been free from frost in the West of Cornwall, for Fuchsias, Hydrangeas and Calceolarias are still in bloom in the gardens; and I remarked the dog-violet, abundance of daisies, and a species of wild Geranium and Senecio in the open fields about Pendennis.—*T. Vernon Wollaston* (on board the 'Miranda,' off Falmouth); *December* 17, 1857.

*What there is beneath our Noses.*—My wish is to draw the attention of all and sundry young men who have never bethought themselves about the subject to the wonders which the roadsides, quiet lanes, woods, thickets, moors, or amongst whatsoever kind of scenery they may chance to be located, would yield them, if, instead of frittering away and spending their time without a single thought of seeing into Nature, they would only lie in her lap for an odd half-hour at a time, and recount to themselves a few of the many histories which even a couple of yards' square of a grassy bank furnishes. I feel convinced that one single experiment would astonish them at their ignorance. It startled me considerably, some few years ago, when I first heard of caterpillars taking up their quarters in leaves of grass, and that they were to be found everywhere for looking after; places where I had lain a thousand times, either resting after a day's hunting, or thrown myself down upon with a friend to enjoy our *otium cum dig.*, being tenanted by scores of larvæ mining and working out an existence in such narrow houses; yet there they are sure enough, and abundant proofs have been shown establishing this fact. Broad-leaved grasses or narrow ones, even like a hair, may, on a little examination, be detected occupied by a creature worming its way down between the skins, and in some cases so large (as in Elachista cygnipennella) that one almost fancies they stretch the grass considerably to find room for their bodies. There is no mistaking them when once seen, nor do their jaws ever seem to rest. Take a grass so tenanted, mark it at the place where the larva is, leave it for a couple of hours or so, and then go back and see the progress. Had it been working for a wager, or doing it at so much per yard, it could not have got on faster. Commercial crises don't affect them as they do us poor creatures, and out in their natural state they never get put upon half-time, although they are to be found on short (grass) commons as abundantly as anywhere else. The Great Master gives them a piece of work to do and they do it, whether it be to work out the natural transformations of the creature itself, or as a body on which battens the parasite in its earlier stages. Some of them show a decided partiality for a single kind of grass, while others go in wholesale, and the larva of the same species is to be found in several kinds. E. albifrontella has about as wide a range as any I know, and zonariella seems as fondly attached to the rough hair-grass (*Aira cæspitosa*). Adscitella, too, has a peculiar liking for the blue moor-grass (*Sesleria cærulea*), for, although plenty of other grasses grow amongst and beside this one, where I find the creature by scores, yet I never found it in any other. Each has also its own peculiar manner of working: some merely cut out a channel large enough to allow the body to pass down, and others mine the whole width of the leaf. The mine of one larva assumes a pinkish tinge, of another brown, and that of adscitella is nearly white, and these are the stepping-stones towards the discrimination, at first sight, of the different species of larvæ. Some never venture into the stem, others do, the depths of their proceedings being only checked by the roots themselves. Then, again, whilst lying looking for these habitations, see the endless variety of other creatures which come upon the scene. Numbers of Apions and Sitonas crawl up the leaves, and after a long look at you, as if the sight of such a monster was too much for them, they suddenly seem to lose all power over their limbs, and drop apparently lifeless to the bottom. Once out of sight, this feigning, however, does not last long: up they come again, this time a little more fearless than before; and it is only when you make a movement in their direction that they repeat their little piece of juggling. Then there are numbers of Carabidæ mining about the roots, and occasionally Leistus rufescens may be met with running up the stems and leaves to have a look round and see what is doing. The Halticæ keep hopping about in all directions, and "cocktails," as the Staphylinidæ are politely termed, plunge into all sorts of holes and corners should their quiet be disturbed. Ichneumons, too, revel all over, in search of some poor unfortunates to act as nurses and be mothers to their fry; and the bugs drop down with a lazy whir-r-r, as if it was taxing their powers too much to make them use the appendages given by Nature for transporting them from one place to another. Besides these there are spiders of all shapes and sizes, black spiders and red, gray spiders and brown; some all legs and little or no body, others all body and little legs; some with the body as large as the head, and some all body and no head; while one little flat fellow has a pair of feelers stretched out in front for all the world like a pair of huge lobster-claws, and it seems immaterial to him whether he goes backwards or forwards. These are but a few of the many interesting little scenes to be met with on any summer's day and by any one. The great book of Nature is open to all. Her gifts are alike to each, munificent. There is no stinginess on her part; and, indeed, it very often happens that he who knows least about her fares best, as if she threw inducements in his way to call him from the forgetfulness in which he has hitherto been wrapped to scenes of wisdom, to a very "fairy land." I don't ask all to turn butterfly hunters because I am one; but I ask them to find something to do. Turn over some of Nature's pages; surely some of them have interest for you; so that in after years it may be a sweet recollection to refer to hours and days numbered amongst the happiest of your lives.

"Let Nature be your teacher;
Sweet is the love which Nature brings:
Our meddling intellect
Misshapes the beauteous form of things."

—*John Scott; Southfield Villas, Middlesbro'-on-Tees, December*, 1857.

## NOTICES OF NEW BOOKS.

'*The Insect Hunters; or, Entomology in Verse.*' London: Newman. 1*s.* 6*d.*

> * * * "Ballads that
> Speak in tones so plain and childlike,
> Scarcely can the ear distinguish
> Whether they are sung or spoken."

FROM the date of our earliest acquaintance with entomologists and Entomology there has been a demand, universal, clamorous, always unsatisfied, for a "First Book;" a book that should induct knowledge into the minds of the uninitiated; a book that "he who runs may read." True we had Kirby and Spence's 'Introduction;' but, and we say it advisedly, that work really contains no introduction to the science. Volumes i. and ii. are, beyond a question, the most delightful reading that one need wish for; but we may read them again and again, we may digest and appropriate the vast amount of agreeable and instructive matter they contain, without stepping over the threshold of that temple which may be said to contain the arcana of the science. Volumes iii. and iv. are ponderously learned, and, shall we venture to say it? totally unadapted for a beginner. To the uneducated they are a sealed book, on account of their style and language; to the poor, and it is no disgrace to be poor, they are a sealed book, on account of their price; and so true are both these positions that we never hear of these two volumes unless some learned critic, once in the course of seven years, alludes to them for the purpose of pointing out some errors of explanation or arrangement which he thinks he has detected. The reprint of vols. i. and ii. in a condensed form, and at the amazingly low price of five shillings, is a boon on the part of Mr. Spence for which we cannot feel too grateful; this, which in all probability is the last public act of a long and useful life, will make him as dear to those who succeed us, as his truly catholic kindness has made him to all who have enjoyed the honour and the pleasure of his personal acquaintance. This cheap reprint has recommended Entomology in its most enticing form to hundreds who had never before known even the meaning of the word. If, therefore, Entomology be a science worthy of study, to Mr. Spence alone is due the merit of introducing it to a world of readers totally inaccessible to the more technical and laboured productions of its votaries.

This reprint does not supply, but really seems to suggest, the want of a methodical introduction to the science. It shows you a well-stocked garden full of luscious fruit and bright flowers: the garden, too, is near at hand; you see it clearly and distinctly; but still there is around it a kind of invisible fence, which, while it hides nothing within, does not permit one to enter: an entrance-gate is wanting,—an entrance-gate that will admit you to the garden, that will meet the oft-repeated requiring, "Oh, how how I should like to know the first principles of the science." The 'Insect Hunters' is this entrance-gate; it is the very work to satisfy this requiring; and it is one of its peculiar merits that it will be as easily understood by the child as by the man. The instruction of children is an art, alas! but little understood; hence the necessity for such books as these, and hence their great value. Children will devour its pages, and thus instruct themselves; and parents need not be ashamed to be detected in learning from a book bought for their children. Let us never lose sight of the fact that we are all children in knowledge with regard to the unknown. Indeed, no mistake can be greater than to suppose that the hard-headed, thinking man, amid all his pressing avocations and cares, desires or requires that knowledge should be presented to him in an abstruse or difficult form. The exact converse of this is the truth. The chess-player in advancing years contents himself with the backgammon board; the mathematician and financier often become confirmed novel readers: whether young or old, whether we seek instruction or amusement, we like it to be presented to us in the easiest and most attractive form. The anonymous author of the 'Insect Hunters' appears to be cognizant of this fact, and has been at infinite pains to remove from his instructions all that is difficult or repulsive; his work requires no glossary; it needs no teacher to explain its meaning; it is in itself both glossary and teacher; it explains itself.

The style of the book will be explained to all who have studied, and who has not? Longfellow's beautiful 'Hiawatha,' when we say that it is a faithful imitation of that exquisite poem. From the 'Introduction' and 'Valediction' we cite the following passages, simply to exemplify the spirit in which the work is written: we leave the poetry to speak for itself:—

"Ye who love the face of Nature,
In the storm or in the sunshine,

In the deep shade of the forest,
On the high and naked mountain;
Ye who trace the Maker's finger
In this world of his creation,
And look through this bright creation,
Through these Ios and Edusas,
These Sybillas and Machaons,
Through the hosts of minute creatures
Peopling every blade and blossom,
Up aloft to Him who made them;
Ye whose hearts are fresh and simple,
And have faith in God and Nature,
Who believe with all your spirit
In benevolence eternal,
Inexhaustible and perfect;
Ye who sometimes in your rambles
Through the green lanes of the country,
Where the Clematis and brier
Intertwine their arms in wedlock,
Pause to drink a draught of pleasure,
Far apart from all that's worldly;
You I ask to read this Poem,
Read this short and simple Poem;
Ponder o'er its peaceful teaching."

*Introduction*, p. 4.

" But in learning or instructing,
In receiving or in giving,
In that intercourse with mankind
Into which the path of Science
Must inevitably lead thee,
Must most innocently lead thee,
Mind in all things let the conscience,
Planted in thy breast by heaven,
Be thy rule and guide of conduct.
If through life we yield obedience,
Cheerful, without hesitation,
To that everpresent mentor,
That infallible director,
Then we find no cause for mourning,
Vain or unavailing sorrow:
Memory then, like placid moonbeams,
Sheds a soft and silvery lustre
On the days that have departed;
Happiness, with smiling features,
Child of innocent employment,
Brilliant as the noonday sunshine,
Lights the now of our existence.

> Lastly, like this glow of sunset,
> Reddening the westward heaven,
> Prelude of a fair tomorrow,
> Hope illumines the hereafter."
>
> *Valediction*, p. 81.

"All this has nothing to do with Entomology." Granted; nevertheless, it accomplishes what we desire: it shows the spirit in which the whole is written. We will now give a brief summary of the contents, selecting a single example of the author's power of adjusting the free and flowing phraseology of verse to the precise requirements of accurate description. The first chapter is entitled "the four stages," the egg, larva, pupa and imago. The author represents himself as leading by the hand an intelligent little girl eight years of age, and showing her the eggs of the vapourer moth; the caterpillar of Sphinx Ligustri; the chrysalis, in its cocoon, of the lacquey moth; and, lastly, as an imago, the common cabbage butterfly. As the two insect hunters, old and young, find these, in the course of a short walk, the elder explains to the younger all that need be known respecting them. The second chapter explains the seeming mysteries of metamorphosis, and the author founds his system on their differences. The third chapter describes the tribes of Lepidoptera; the fourth of Diptera; the fifth of Hymenoptera; the sixth of Coleoptera; the seventh of Stegoptera; the eighth of Neuroptera; the ninth of Orthoptera; and the tenth of Hemiptera. The names of all the tribes terminate in *ina*, producing a degree of uniformity that assimilates to that now universally employed in Botany. In giving entire the description of one of these tribes, and that perhaps the most awkward to deal with, we shall show the manner in which the author has mastered them all. We cite the "Gallflies."

> "All the oakapples and inkgalls,
> All the cherrygalls and nutgalls,
> All the bitter Dead Sea apples,
> All the beautiful oakspangles,
> And those freaks of sportive Nature
> Called by children wild mossroses,
> Found in summer in the hedgerows,
> All these, and a hundred others
> Quite as strange, and some far stranger,
> Are the work of puny insects,
> That we always call the Gallflies,
> Or in science Cynipsina.
> These most wonderful formations,

> Nurseries of Gallfly larvæ,
> Little white and footless maggots,
> Are not built by skill instinctive
> Of the quiet pent up inmate,
> Or its winged and wandering parent,
> But are merely strange distortions,
> Caused by buoyant sap diverted
> From its true and proper channels;
> Yet how uniformly fashioned!
> How alike in size and figure
> Those each kind of fly produces!
> How unlike to every other!
> All the Gallflies are small insects,
> With antennæ very simple,
> And with bodies flattened sideways,
> And divided in the middle
> Into nearly equal portions,
> Called the abdomen and thorax;
> And the female has a borer,
> Almost all Gallflies are female,
> With which instrument she pierces
> Leaves or tiny twiglike branches,
> Laying eggs within the fissure;
> Her clear wings are almost rayless,
> And her feet are all fivejointed."
>
> P. 36.

This will give the readers of the 'Zoologist' a clear conception of the plan of the work. All the natural families of insects known in Britain are described in this exact manner; and no word, not even the familiar "antenuæ," is used for the first time without an accompanying explanation. Thus it is impossible even for those small wits whom we so often find purposely mispronouncing a word, in order to show how difficult and how unintelligible is Science,—it is impossible, we say, even for them to make out their own case. The names, owing perhaps to the musical termination, adapt themselves wonderfully to the octosyllabic metre of 'Hiawatha,' which has doubtless been adopted on account of the facility with which it may be committed to memory. This facility is unequalled, as every one must have found who has read the original attentively: it seems to linger in the mind that makes no effort to retain it, and to mingle itself with our passing thoughts, whatever be their theme. Such an assistance is invaluable where so much depends on memory; and we cannot doubt that this alone, independent of its higher merits, will render the 'Insect Hunters' a lasting favourite with all who will condescend to consider themselves juveniles either in years or knowledge.

J. G.

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## *On the Derivation of the English word "Mare," as explained by the Rev. P. H. Newnham.* By THOMAS THOMPSON, Esq.

I HAVE been much pleased with the Rev. Mr. Newnham's remarks on the etymology of names of animals; but in one instance he seems to me to have run into the realms of fancy, both in deriving the word *mare*, a female horse, from the Celtic *march*, which he says means a war-horse (it in fact simply means a stallion), and in the reflections he indulges in, arising from what I conceive to be his false derivation of the word *mare*, under the remarks he makes on the horse.

The truth seems to me to be that our Saxon ancestors had an inferior breed of horses before the Normans came amongst us with their better breed. *Hors* was the Saxon name of the animal; *moere* is the female's Saxon name; *colt* the name of the offspring, both male and female, the former being distinguished as a *hors colt*, as it still is amongst our American cousins. When the Normans came and made serfs of our Saxon ancestors, the latter, who tended the horses, retained their own terms relating to them; but the Normans, the gentry of that day, used their own terms, which have descended, for the most part, to the upper classes of the present time. Their *cheval* gave the name *cavalry* to their horse soldiers: those who kept and rode horses were chevaliers; but in the instance of the name of the animal the Saxon grooms and horse-feeders seem to have come off conquerors, and *cheval* succumbed to *horse*, which we still use. The better breed of Norman horses had probably the same pains bestowed on their pedigrees as our modern race-horses have. In that superior breed the male was, as at present, called by the Norman term *sire* (the father), the female by the term *dam* or *dame* (the lady). *Colt* seems to have then been applied to the male offspring only, dropping the compound word *horse-colt;* and to the female offspring the Norman word *filly* (*fille*, a daughter) was applied. The dam, when thus become a mother, was called by the Norman word *mère* (a mother), now spelt *mare*, agreeably to the English *sound* of the French *mère*. This may also have been occasioned by the great similarity of the Saxon appellation *moere*, also signifying a female horse; and it is singular that where the Norman and Saxon words were so much alike they did not amalgamate into one common sound; but to this day, in Yorkshire and the northern counties, where the Saxon and Danish pronunciation of words is still predominant with the lower orders, the female horse is, amongst the latter, always spoken of as "the meer;" whilst the upper classes pronounce it "the mare," just as our Saxon and Norman ancestors respectively did in their day. The Saxon word *fole* (now *foal*) seems to have kept its ground as a general term for the offspring of horses which (after colt had become confined to the male) were called, as males, colts or colt-foals, and, as females, fillies or filly-foals.

When we see how naturally the word *mare* comes from the Norman *mère* and Saxon *moere*, whence all our other words relative to horses are derived, I think we have no occasion to resort to the far-fetched word *march*, Celtic for a stallion (or war-horse if you will), for a derivation.

A dray-horse, no doubt, through a number of changes, has its ultimate root in the words *to draw;* but its proximate derivation is from the horse's employment in propelling the carriage, used by brewers, called "a dray:" that word, no doubt, is based on the words *to draw*.

These remarks, perhaps, are scarcely fit for the 'Zoologist;' but I have been led into them by having pen, ink and paper before me whilst reading page 5359 of that excellent periodical; so, being written, I send them.

THOMAS THOMPSON.

Hull, January 8, 1858.

[I may remark that, without the slightest pretension to etymological research, I had always considered the French "*mère*" and English "mare" strictly synonymous as applied to the female horse; thus, in France, we continually hear the term *mère et poulain*, "mare and foal," although our dictionaries give no such expression. I believe we shall be quite safe in accepting the English word "mother" as the meaning common to the two. Still the origin of the two words meaning "mother" may be an open question, and I quite incline to agree with Mr. Thompson in discarding the word *march*, or stallion, as that origin.—*Edward Newman.*]

## *Proceedings of Natural-History Collectors in Foreign Countries.*

**Mr. Louis Frazer.**—Mr. Louis Frazer left England in August last to proceed to South America, for the purpose of collecting objects of Natural History in the mountain-valleys of the republics of Ecuador and Peru. Mr. Frazer left by the West Indian mail steamer on the 17th of August; arrived off Colon, 10 A.M., on the 9th of September; crossed the isthmus next day to Panama by railway* in five hours and a half; on the 15th embarked on the Pacific S. N. Co.'s packet "New Grenada," and reached Guayaquil on the 20th at daylight. The following are extracts from his letters.

Guayaquil, September 29.—My boxes are all on board the chatter, or large flat-bottomed boat, which will carry them down the Guayaquil river and up the Naranjal. 9 A.M. I saw Sr. Oreallana, who said he was going on board, hastened to get my box, containing bread and brandy for the road; by the time I got to the river (not more than five minutes) the chatter was well in the river; hailed,—no answer. After some delay, secured the captain of the port's boat, and followed. We were gone about two hours, but could not find her in the dark. Until one o'clock next morning I was endeavouring to hire a boat to follow, but without success.

30th. Mr. Mocatta and self were hunting all day for a boat; at 7 P.M. procured one for thirty dollars; at 7.30 P.M. started with a strong tide and four oars; at 11 P.M. arrived off the upper end of the Island of Puna for the night and tide.

Oct. 1. 8 A.M. Off the Naranjal river, bar quite dry. Had to wait the tide. Some rain. About Puna and up the Naranjal river there are magnificent mangrove trees, apparently forming splendid forests; trees thirty and forty feet high and thick in proportion. The Naranjal is not more than thirty or forty yards wide anywhere. 3 P.M. arrived at the station called Naranjal Port,—it cannot be called a village, as it has only one house and two or three miserable huts scattered about. Plenty of birds and lots of filth. On the banks of the Naranjal we saw numerous alligators sloping into the water at our approach; but there was one party of upwards of twenty-four which never moved;

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* Colonel Totten, the chief engineer and director of the Panama Railway, upon hearing who Mr. Frazer was, and the objects for which he was travelling, immediately granted him a free pass for himself and his baggage over the railway, thus saving him an expense of upwards of £20.

one or two of them opened their mouths, but I could not hear what they said.

Sr. Oreallana, my cicerone, says the captain of the chatter was drunk, and went away without him, and that it cost him four dollars for a canoe to overtake her.

2nd. Planked it for the night, which was very cold. I have a bit of a cough and a nasty cold. Much rain. 12 P.M. Started on horses. The road was entirely through the bush, with the exception of one chocolate plantation, in bad order. Arrived at the town of Naranjal at 2.15 P.M. Naranjal is rather large; the houses are built separately and on sticks, with split bamboos for walls. The people, for the most part, appear dirty, and the place corresponds. All through this country they tie pigs up by the neck, as we do dogs.

3rd. 8 A.M. Having procured mules, we started in pouring rain, and I had only white duck trousers on, as I was given to understand that the box with my woollen things was gone on ahead. They used one of my blankets for a mule-cloth and the other for a saddle-cloth. Passed through bush, and arrived at a rancho, kept by a young white couple, on the side of a torrent: being wet through, made an ineffectual attempt to dry my external clothing. Half-past 11 A.M. Rain abated. Started again. Crossed the torrent four or five times and over two or three ridges; arrived at an open shed called "The Mint," from a species of wild mint that grows there. We have been travelling in the mountains for about an hour after dark: I can only say it was not pleasant, the road being bad enough by daylight. Felt as if I had ague.

4th. Took chocolate. Had some little difficulty to make the mules take the right direction, and no wonder, for the road was even worse than yesterday. Morning cold. Started at 7 A.M. I should have stated that "The Mint" was situated on a little plain amongst the mountains, with a rivulet running through it. 10 A.M. Arrived at Mollcturo Pueblo, a pretty valley, with a few Indian huts scattered about. Church was going on. In the church the fiddle, drum and triangle were playing gaily anything but psalm tunes. After crossing two or three water-courses or torrents we arrived at a place called Meeweiss at 5 P.M.: this is the best-looking farm or rancho which I have seen, having stone walls and wicker fences all round about, but the house, as usual, was very miserable. Here we stopped for the night. Half-past 5 P.M. A mist or cloud, like a London fog, swept quickly through the valley, making almost night of it; with it came a very cold wind.

5th. 6 A.M. Started. Traversed valleys all day, the greater part through bog. At a quarter past 2 P.M. this day we stopped at an Indian hut, and requested food on payment; this was refused; there was a great war of words; at last Oreallana struck the Indian in the face, and I expected a fight would ensue; but no,—the Indian went away, and ultimately his wife made us a meal, such as it was. This, they tell me, is the usual way of getting what you require *en route.* During this squabble there were several men and women, travellers, looking on, but no one interfered. Some part of this day's journey was very cold, but not so much so as I had been led to expect. The mountains here are nearly barren, and have the appearance of gigantic Islands of Ascension. Contented myself with two raw eggs and a glass of water, which I got at a place called Potosi, and turned in for the night.

6th. Rain in the night: morning beautiful, cool and comfortable. Had the pleasure of seeing a longtailed, green-throated humming bird flitting from flower to flower, close to the shed in which I slept: the male came first, and, when he had been gone some little time, the female came: this looks like breeding, although they say this is not the season. The woman of the hut made me some breakfast, and at ten minutes to 9 A.M., started on a pony, and arrived in Cuenca about half-past 10 A.M. Why we did not come in last night is more than I can say. The muleteer left me in a house in town, bid me "adios," and rode off. I had been here about an hour, and was just thinking I might remain and starve, when I heard footsteps approaching and the sound of English; they proved to be Colonels Talbot and Harris, who, having heard of my arrival, had come to see who it was. My travelling companion had orders in Guayaquil to introduce me to certain persons, but he deserted me last night, so I had to introduce myself, when Colonel Talbot told me that the house I was in was his, and that I might remain with him as long as I pleased. And here I am, nearly 3000 feet above the sea. Cuenca seems surrounded for miles by apparantly well-cultivated farms; the corn is ripe, and for the most part cut and carried.

15th. Went out shooting; but the roads are so intolerably bad that I am compelled to give it up until I can procure a mule. Mud, water and loose boulders are not pleasant travelling amongst. The remainder of my boxes arrived. The road from Guayaquil to Cuenca, for the most part, may be likened unto travelling up and down deep dirty ditches or rucks, with stones stuck in every possible position to impede your progress or knock your toes, shins and knees against:

other portions are open water-courses, either with or without water, according to circumstances or seasons; and, even in the more level places, which are "few and far between," the stones seem placed on purpose to puzzle the mules to know where to find a footing: the ascent is frequently two feet in three: add to this a stone every now and then, from 18 to 24 inches in height, to be ascended or descended according to circumstances. The only wonder to me is how the beasts ever managed to get over the road.

The first day was for the greater part through magnificent forests, the trees almost covered with orchids; the second day the trees became more stunted, and the orchids not noticeable, but almost every hour produced some beautiful flower new to me; the third day was through almost barren mountains, at times presenting a view, on looking up, of several hundred perpendicular feet of bare rock. I saw but few birds and not any mammals *en route*.

Cuenca, October 21, 1857. This time I have not much to say. I am busy fixing up to join a merchant, who has promised to take me with him (I say "promised," for, until the thing comes off, I have no faith in anybody here) to Gualasio, about twenty-seven miles eastward from here,—a cane country. After a few days' stay in that place, we are to proceed to Gualaquisa, about eighty miles further on to the E.N.E., but on the eastern side of the Andes,—a Caskarilla country, where I hope to meet with novelties. In this place I have been exceedingly disappointed; specimens of all kinds are scarce,—species still scarcer. I have only obtained about thirty species of birds, and these of no great account, although I have been out every morning, weather permitting, and have hunted all round the town for some four or five miles; moreover, I believe I have nearly all the species to be found here, at any rate at this season. I have only three or four Mammalia. I have three or four genera of shells, but only two kinds of which I could get any number. Insects are very, very scarce: all this perhaps owing to the entire neighbourhood being cultivated.

Louis Frazer.

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*Note on Mr. Wallace's Travels.*—It appears an object much to be desired by lovers of Natural History that (if possible) before Mr. A. R. Wallace returns homeward from the Eastern Islands, where he is so zealously pursuing his researches, his attention should be directed to Siam. The Fauna of that country is at present quite unexplored, but there is, I think, reason to anticipate that it will richly reward a close scientific investigation. It is the native land of the (so-called) "white elephant," and it possesses an extraordinary amphibious fish, which may be seen by persons passing on

**the river, when the soil is wet, gliding over the bank into the jungle. As yet Siam is almost unknown, but several years ago a Mr. Neale published (in, if I recollect right, the series styled the "National Library") a little work descriptive of a residence there of some duration, and last year produced 'The Kingdom and People of Siam,' in two vols., by Sir J. Bowring, the result of his official mission thither in his way to China. Not only are both these accounts curious from the peculiarities they exhibit, but they agree in giving a most interesting and very hopeful view of the present enlightened rulers of Siam, who certainly are perfect anomalies among the despotic sovereigns of Asia. Neither of the above-named authors is a naturalist, but the latter states that the country on both sides of the great central river, the Meinain, to some distance above the capital, Bangkok, is generally an impenetrable forest, abounding, however, in animals, of which elephants, tigers, deer and monkeys are, I think, especially enumerated. The upper portion of the kingdom is more open. Foreigners cannot range the country without permission, in obtaining which, however, little difficulty is likely to occur (unless the recent treaty and professions of amity prove mere "moonshine"), and the inhabitants are not hostile to Europeans. Should any fortunate explorer discover a white elephant, or even a white monkey, great would be his luck; but to kill either would be ruin. Sir J. Bowring considers Siam, as a tropical country, very healthy. PS.—Mr. Wallace mentions (Zool. 5893—4) the annoyance to himself, and the injury to his entomological collection, occasioned by ants and other small insects. Very possibly this inconvenience might be prevented by the means found effectual in protecting furs from moths. During the Great Exhibition a lady, one of my own family, asked the person in charge of the Russian furs how they preserved their wares from being damaged, when she was informed that their practice was to distribute quills inclosing small quantities of quicksilver among the furs.—*Arthur Hussey; Rottingdean, January* 18, 1858.**

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## *Proceedings of Societies.*

### ENTOMOLOGICAL SOCIETY.

***January* 4, 1858.—W. WILSON SAUNDERS, Esq., President, in the chair.**

#### *Donations.*

**The following donations were announced, and thanks ordered to be given to the donors:—'Nota sul genere Opsebius fra i Ditteri Enopidei;' presented by the Author, Achille Costa. 'The Canadian Journal of Industry, Science and Art,' N. S., Nos. 11 and 12; by the Canadian Institute. 'Descriptions of eight new Species of Entomostraca found at Weymouth;' by the Author, John Lubbock, F.G.S. 'The Zoologist' for January; by the Editor. 'Memorias de la Real Academia de Ciencias de Madrid,' Vol. iv.; by the Academy. 'The Athenæum' for December; by the Editor. 'The Literary Gazette' for December; by the Editor. 'The Journal of the Society of Arts' for December; by the Society. 'The Insect Hunters;' by the Author, Edward Newman, F.L.S. 'The Entomologist's Annual' for 1858; by H. T. Stainton, Esq.**

### *Exhibitions.*

Mr. Janson exhibited a root of Monizia edulis, *Lowe*, from Dezertas Island, near Madeira, where it is commonly known as the "wild carrot." Although brought to this country in May, 1857, since which time it had been kept in a dry room, it still exhibited traces of vitality, and was infested with a species of Coccus.

Mr. Waterhouse exhibited to the Meeting his extensive series of the British species of Atomaria.

Mr. Douglas exhibited a portion of one of the staves of a flour-barrel, perforated by the larva of a Rhizopertha, apparently an undescribed species. All the softer portion of the wood (American oak) was completely eaten away, and considerable leakage and loss of the flour had taken place in consequence.

Mr. Stevens exhibited some Lepidoptera, lately received from Mr. Bates, taken in the neighbourhood of Ega and on the river Janari, Upper Amazons. The collection contained Papilio Columbus, P. Bolivar, P. Patros and P. Pausanias, some splendid Catagrammæ and Erycinidæ, and a number of fine Geometridæ. The most interesting portion of the collection, however, was a series of minute Lepidoptera, which had arrived in the most perfect state of preservation, and included many most beautiful and remarkable species, especially amongst the Pyralidæ and Œcophoridæ. The collection also contained several species of Pterophoridæ closely resembling the European representatives of that family.

Captain Cox announced his intention to call the especial attention of the Society, at the next Meeting, to the fearful ravages committed by the Scolyti on the elm trees in the vicinity of the metropolis.

Mr. Stainton read a "Synopsis of the Genus Elachista."—*E. S.*

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The following paper, by Mr. Janson, was read at the Meeting of July, 1857:—

### *Occurrence of Scolytus rugulosus near London.*

"S. rugulosus (*Koch*), *Ratzeb. die Forst. Insecten*, i. 187 (1837), has been reared in considerable numbers from the dead branches of a pear tree, gathered by Mr. Groves in his garden at Lewisham, and not hitherto recorded as British. The question has been more than once discussed in this room whether the Scolyti attack healthy and vigorous trees, or whether they select as a nidus such trees only as are already diseased,—whether, in fact, they are the primary or merely an accessory cause of the devastation which has been attributed solely to them. Each view has found warm and able advocates, but I believe the question still remains open, nor can I aspire to close it, but I think, as far as the species now under consideration is concerned, we may fairly conclude that, under ordinary circumstances, its pabulum consists of *dead* wood, since Mr. Groves informs me that it is on the upper dead branches alone that the insect is to be found, no trace of it being discernible on any other part of the tree; and, in fact, the branches which he has placed in my hands, and from which the specimens now exhibited were reared, present every appearance of having been destitute of vitality for several years. The present species, however, departs considerably in habit from that of its congeners which I have had an opportunity of studying (destructor, *Oliv.*, intricatus, *Ratzeb.*, and multistriatus, *Marsh.*, *Ratzeb.*), whose larvæ subsist chiefly on the inner bark, occasionally only attacking the sap-wood in their progress, and, when full-fed, assuming the pupa state at the end of the burrow, or in a very shallow cell excavated in the sap-wood; whilst, on the other hand, the larvæ of the insect now before us appear to derive their chief sustenance from the solid wood, into which they penetrate deeply, the outer surface presenting only faint traces of erosion.

"The genus Scolytus, first instituted by Geoffroy, but to which our continental brethren persist in applying the more recent generic appellation of Eccoptogaster, proposed by Herbst, at present contains upwards of a dozen described European representatives, all of which subsist upon trees indigenous to or generally cultivated in this country. Of these five only are at present known to me as natives, viz.,—1. S. Ratzeburgii, *mihi*, Ent. Annual for 1856, p. 87 (destructor, *Eric.*, *Ratzeb.*, nec *Oliv.*), frequenting the birch, and probably confined to the northern portions of our island; 2. S. destructor, *Oliv.*, abundantly distributed throughout the southern and central portions of England, and which attacks the elm, confining itself, however, to the trunk and large limbs; 3. S. multistriatus, *Marsh.*, *Ratzeb.*, also peculiar to the elm, where it is occasionally found in company with the preceding, but more generally alone and in the small branches; 4. S. intricatus, *Ratzeb.*, a denizen of the oak, and, according to my experience, attacking the branches only; 5. S. rugulosus, *Ratzeb.*, the species now before you, and which, as we have seen, inhabits the smaller branches of the pear tree; on the Continent, Ratzeburg informs us, it occurs in plum and apple trees. Ratzeburg (*l. c.*) has thus divided the genus:—

§ 1. Abdomen beneath, in at least one of the sexes, with tubercles or teeth.
§ 2. Abdomen beneath without tubercles or teeth.

Of the ascertained British species, Ratzeburgii, destructor and multistriatus pertain to the first section, intricatus and rugulosus to the second. S. rugulosus may be at once distinguished from its near ally (intricatus) by its smaller size, deeper, coarser and rugulose sculpture, and by the punctures on the interstices of the elytra, arranged in regular rows, being of equal depth and size with those of the true or normal striæ; in rugulosus, moreover, the apex of the elytra is usually more or less broadly red. I would further remark that the beautiful series of specimens, which I owe to the kind forethought of Mr. Groves, has enabled me to determine a solitary individual in Mr. Wollaston's collection, taken by that gentleman, several years since, at St. Neot's, and which has long caused me much perplexity, but which I have now no doubt is referrible to the S. rugulosus. In conclusion, I would earnestly recommend this genus to the careful attention of my brother entomologists, as offering an ample field not only for the discovery of new species and the augmentation of their collections, but for elucidating a question of vast importance to the community at large, and to which I have already adverted."

At the Meeting of November, 1857, Mr. F. Walker read the following

### *Notes on Aphis Quercus.*

"Having lately taken a few specimens of the Aphis Quercus of Linneus, I beg leave to offer to the Entomological Society a few notes on that species. It was first discovered by Mr. Ingall, in 1847, on an oak at Dulwich; Mr. Smee found it soon afterwards at High Beech, in Epping Forest; and about a month ago, when I happened to meet him, he told me that he had just observed it on an oak at St. George's Hill, Weybridge. He kindly directed me to the spot, and after some search I found the oak tree by a foot-path in the wood, and in the neighbourhood there were two other oak trees also infested by the Aphis. The presence of the latter is detected by the numbers of the black ant which come to feed on the honey, and whose multitudes much add to the trouble of extracting the Aphis, for its body is so soft, and its rostrum is buried so deeply in the bark, that it must be cut out of the tree carefully, in order to avoid crushing it. I then wrote to Mr. Ingall, and asked him some questions respecting the structure of the rostrum, and he with much kindness lent me all the specimens which he had preserved in Canada balsam, fifty-five in number, and his MS. notes, from which I have extracted nearly all the following observations.

### "THE MALE.

"This is apterous, like the males of many other species of Aphis, and appears about the beginning of October, and continues till November. It is less than one-fourth of the size of the female, and about twice the size of the egg (which is large), and has no appearance of any mouth either in the young or in the adult state. In other species of Aphis the mouth has a like structure in both sexes.

### "THE WINGED FEMALE.

"This lives early in the year, and seems to be scarce. It does not possess the long rostrum which distinguishes the following form, and is very different from it in appearance.

### "THE WINGLESS FEMALE

has a rostrum which is more than twice the length of the body, and in the young insect is more than four times the length of the body. It seems to be quite distinct from the true mouth, which possesses three extremely slender setæ (the middle one double); these are received into the groove of the rostrum or tube, and rather exceed it in length. The rostrum is fitted into a 'sac at the base of the lower lip, which sac probably extends nearly the length of the body;' it can be folded? and is often contracted to half its usual length, and more rarely to one-fourth of its usual length, and may be seen retracted within the body to the base of the fore legs, or to the base of the hind legs, or even to the tip of the abdomen. The joints, also, of the rostrum can be withdrawn one within another, like the parts of a telescope, and the whole apparatus is peculiarly adapted for the extraction of the sap of the oak between the rugged clefts of the bark. The eggs are deposited in October and November.

"I will endeavour to make further observations on this species during next year, and hope that in the meanwhile some person will kindly undertake to dissect it, in order to ascertain fully the structure of the rostrum, and how it is received into the body."

## NORTHERN ENTOMOLOGICAL SOCIETY.

*December* 26, 1857.—B. COOKE, Esq., in the chair.

### *Election of Members.*

Mr. John Sang, of Darlington, and Mr. T. Wilkinson, of Scarborough, were elected Members.

### *Exhibitions.*

Mr. N. Cooke, on behalf of Mr. Archer, Surgeon of the "Great Britain" steamer, exhibited a box of Australian Lepidoptera, principally Sphingidæ and Bombycidæ, captured by Mr. Archer during his last journey.

The Secretary, on behalf of Mr. Brewer, of Reigate, exhibited a box of Coleoptera, in which were six Cicindela germanica, Tarus axillaris, Callistus lunatus, &c.

Mr. Carter exhibited a dark-coloured variety of Arctia Caja, in fine condition; a perfectly brown variety of Halia wavaria; a malformed specimen of Hydrophilus piceus, with a *spine* on the right side of the prothorax; a specimen of Monohammus Sutor, and another of M. Dentator, taken at Manchester this season; and lastly, a specimen of Clytus erythropus, a Mexican species, which has been found in Manchester.

Mr. Carter then called attention to a copy of 'Fabricia Entomologica,' written by his friend Mons. H. Jekel. He strongly recommended it to the members, and requested their Secretary to note its title, which is as follows: 'Fabricia Entomologica; par H. Jekel, Membre de plusieurs Sociétés Savantes Nationales et Etrangers, Paris Autographie Typomorphe de l'Auteur, 17, Rue des Saint Pères, 1854.'

Mr. Almond exhibited a specimen of Phibalapteryx gemmaria, captured on a lamp at Birkenhead, October 14, 1857; the specimen was in beautiful condition: the Secretary observed this was the fourth specimen which had been taken near Birkhenhead; two by Mr. Diggles, in Walker's Lane, in June, and one by Mr. Brockholes, in poor condition, at the end of July or in August, the exact locality not known; these, with one taken by Mr. Greening, near Warrington, in June, were all he had seen taken in the North. He then exhibited Heliothis armigera, taken at Bromborough on the 15th of November last, and a specimen of Phragmatobia Menthastri, taken on the 14th of October: it was observed that several early species had appeared during the past autumn, quite out of the regular course: this led to a discussion on double-broodedness; the result of which was that several species supposed to be double-brooded were proved to be continuous appearances, since in most of the species considered double-brooded, larvæ of all sizes and the perfect insect on the wing could be taken on the same day. Mr. Greening and Mr. Cooper observed that from Notodonta larvæ, taken in August and September, they have had a constant succession of perfect insects coming out in their cages from spring to autumn.

The Secretary exhibited a box of insects from Mr. Machin, of Globe Fields, London, in which were beautiful specimens of Laverna Raschkiella and Laverna conturbatella. He also exhibited a box from Mr. Wilkinson, of Scarborough, principally Micro-Lepidoptera, the most interesting species among which were Lithocolletis Amyotella, irradiella and Nicella, Bucculatrix cidariella, Demaryella and cristatella, Nepticula angulifasciella, Tityrella and subbimaculella, Trifurcula immundella, Laverna propinquella, Gelechia acuminatella and viscerella, Coleophora troglodytella, murinipennella and juncicolella, and a magnificent specimen of Stigmanota lunulana, all taken or bred by himself this season.

The Secretary then exhibited a box from Mr. Dutton, of Hammersmith, in which were two fine specimens of Nonagria geminipuncta, taken last summer, observing that it was generally represented by dealers that this species was exterminated at Hammersmith Marshes, but such was not the fact; a series of Acentropus niveus taken by E. Brown, of Burton-on-Trent, on the river Trent, where Potomogeton pectinatus was plentiful, and a dozen Pterophorus lithodactylus taken by himself near Heabone; and a box from Mr. Reading, of Plymouth, in which were four of the finest specimens of Heliophobus hispidus: also a box in which was Glæa erythrocephala, which Mr. N. Cooke observed had very little resemblance to the continental specimens of this species in his cabinet of European Lepidoptera, but it was remarked in Mr. Reading's letter that it represented the variety glabra of Duponchel, as did also the specimen taken by Mr. Cooke, of Brighton.

An interesting discussion ensued upon the necessity or advisability of naming varieties, the Rev. H. H. Higgins contending for it, and being opposed by other members. The Secretary produced a series of varieties in his cabinet to show how useless such a course would be, as the same variety could rarely, if ever, occur again; in some genera the Rev. Dr. Hume observed, perhaps it was advisable only to name permanent varieties: this led to the old question of what is a species? and many scientific and some humorous remarks resulted, the question remaining open for further discussion at another time.

Then followed the exhibition of two more boxes from Mr. Reading containing Coleoptera: in the first was a beautiful pair of Meloë brevicollis and a fine pair of Carabus intricatus; the most interesting species in the second box were Drypta emarginata, Leistus montanus, Elaphrus lapponicus, Panagæus quadripustulatus, Chlænius holosericeus, Stenolophus elegans, Hydroporus marginatus, &c.

The Secretary then exhibited a box of Lepidoptera, collected in Australia by Mr. Diggles, and sent as a present to his friend Mr. Warrington. Amongst them were representatives of the following British genera: Satyrus, Polyommatus, Eulepia, Sphinx, Procris, Euthemonia, Stauropus, Phragmatobia, Agrotis, Pyralis, Asopia, Chlorochroma, Coremia and Acidalia; Peronia was well represented, one species nearly allied to, if not identical with, our comparana; Sericoris, Eupœcilia, Xanthosetia, Cochylis and Tortricodes; in Tineina, Lampronia, Anesychia, Tinea and two species of plumes, one allied to our bipunctidactylus, and the other to our pentadactylus, but smaller.

After which was exhibited for Mr. Constantine, of Blackburn, a large box of Geodephaga, captured by him in Lancashire, illustrative of a paper upon specific differences, which was afterwards read for him by the Secretary.

In the genus Trechus, discus, micros, lapidosus and rubens were sent: a number of Pterostichus, including P. Æthiops; P. orinomus and nigrita were also sent to illustrate the paper, as were Amara orichalcica, rufocincta, brunnea, &c.; and among the Bembidia were rufescens, femoratum, bruxellense, lunatum, decorum, stomoides, monticulum, prasinum, pallidipenne, &c., forming a series well worthy of attention. Mr. Constantine also sent a copy of a list of British Rhynchophora (Walton's Nomenclature), which he had got printed to facilitate exchanges.

Mr. Gregson exhibited Eupithecia helveticata, bred from a pupa presented to him by Mr. Wilson, of Edinburgh, and the pupa-case of the same; the perfect insect appeared on the 23rd of December, having been kept in a warm room. After which he exhibited six specimens of Pterophorus Loewii, *Zell.*, taken at Southport, principally by Mr. and Mrs. Davis.

It was observed, whilst on the subject of new species, that it often happened that what were thought new species by one person were well known to others; and the President remarked this was the case with Mr. Edleston's Nepticula Myrtilli, he having had it in his cabinet for years, from Pettypool Wood, Delamere Forest. A member observed here was a singular instance of neglect to name and describe an insect, for fear it might possibly have been named in some out-of-the-way place or other, whilst it was well known we had not anything like it in our British lists; and also of anxiety to name, as expressed in Mr. Edleston's note in the 'Zoologist,'—this species having actually been named before it was bred or seen by the namer.

Mr. N. Cooke brought a box of Zygæna Minos for distribution among the visitors and members.

### *Reports of the Society's 'Proceedings.'*

The Secretary read letters from a number of gentlemen who were desirous of seeing the Proceedings of the Northern Entomological Society published regularly in the 'Zoologist;' they were under the impression that the Society met monthly and that the Secretary had neglected to forward the reports. He had replied to them that the Society met only once in the quarter.

The Secretary also read a letter from the Rev. J. Greene, requesting him to forward the reports to the 'Naturalist' as well as to the 'Zoologist.' In submitting this question to the Meeting, he (the Secretary) observed that he did not keep a clerk, and that he had such extensive correspondence amongst naturalists generally that, unless the Meeting particularly wished it, he would rather not comply with the request. The subject was then allowed to drop.

The following paper, by Mr. W. L. Constantine, of Blackburn, was then read by the Secretary:—

### *On Specific Distinctions.*

"I now send you my paper upon the differences of the allied species of Coleoptera of which I have sent specimens, and from the want of a knowledge of which I have in several instances found the more rare species placed among the allied common species. As my principal aim is to enable the coleopterist to recognise them when out collecting, and thus prevent waste of time, I have endeavoured to show the most prominent differences, some of which can generally be observed even whilst the little creatures are struggling to regain their freedom. I have not in all cases drawn the comparisons between the nearest allied species, but between the most closely allied species which I have taken in Lancashire and sent in the box. All the statements with respect to the rarity or otherwise of the species referred to apply only to my own observations in this country. If I have failed to make myself understood, it may arise from want of practice, for though I find no difficulty in separating any of the species sent, I find great difficulty in transferring my observations to paper, so leave the matter in your hands.

"*Dyschirius nitidus*, *D. salinus* and *D. globosus*. These three species are very distinct, and cannot be confounded with each other. Banks of Ribble.

"*Dyschirius impunctipennis?* and *D. thoracicus* in general form resemble each other, but are easily distinguished by the anterior tibiæ: in the first, they have externally two very obsolete teeth, and the external spine at the extremity is incurved; whereas, in D. thoracicus, they are externally very acutely dentate, and the terminal spine is curved outwardly. There are other differences, but these are quite sufficient to separate them at sight. D. thoracicus is common on the coast below Preston. D. impunctipennis? may be taken by scraping the sand where small burrows are seen in the damp bottoms, amongst sand hills at Wallasey on our coast in May: these burrows are best seen after rain, when the sun has dried the raised sand, which it does in a few minutes: they will be found close to the surface. Here also will be found the hitherto scarce, but here abundant, staphyline, which seems to be the principal food of the Dyschirius: on disturbing one of the burrows in which are both insects, the Dyschirius seizes the staphyline in his mouth, and then looks vastly like an ant carrying its load.

"*Pterostichus Æthiops*. This species may be distinguished from small specimens of P. madidus by the form of the elytra, which are narrowed in front and dilated behind the middle; whereas in D. madidus they are as nearly oval as possible; the difference is best seen on the under side. Scarce. Pleasington and Revidge, near Blackburn, in March.

"*Pterostichus orinomus*. This species, at first sight, resembles P. nigrita very much, but is readily distinguished by the elytra being obliquely sinuated and narrowed at the apex; it has also five or six deep impressions irregularly placed on the third interstice, but P. nigrita has only three, and they are not so deeply impressed as in P. orinomus. I have only met with it on the moors near Accrington, where it appears to be very scarce.

"*Amara orichalcica*, *A. brunnea* and *A. rufocincta* belong to the section with legs and antennæ entirely red, but are the only species which have the margins of the thorax red. D. orichalcica is easily distinguished by the apex of the elytra being testaceous. There is no perceptible difference between A. brunnea and A. rufocincta; the distinction is said to be in the form of the mentum: as we cannot dissect in the fields, it is best to take all; it is probable they will eventually be united as one species. I took a pair of A. orichalcica running on the foot-path near some gardens in Blackburn. The A. brunnea or A. rufocincta in the box is the only specimen I have taken. Near Preston.

"*Trechus Discus* and *T. micros*. T. micros is much duller coloured than T. Discus: it is also narrower in proportion to its smaller size, and the dark patch on the elytra is never distinctly defined: in A. Discus the dark patch is always conspicuous. Both generally distributed on the banks of the river Ribble, but rather scarce.

"*Trechus rubens* is easily distinguished by its general darker colour, &c. Banks of the river Darwen. Scarce.

"*Trechus lapidosus* is easily distinguished by its larger size and flatter and broader elytra. Banks of river Ribble. Very scarce.

"*Bembidium rufescens* is easily distinguished. Not uncommon. Banks of river Ribble.

"*Bembidium bruxellense* and *B. femoratum*. These species are very closely allied: in B. bruxellense the thorax is broader, and the foveæ much larger, with the space between them distinctly punctate; the elytra are wider and the sides more rounded; the punctured striæ deeper, and the spots are generally smaller and more obscure; the antennæ have one basal joint entirely, and merely the base of some of the following ones, red, whilst B. femoratum has two joints red. B. bruxellense occurs on the banks of the Ribble and Morecambe Bay. B. femoratum generally distributed.

"*Bembidium lunatum* is easily recognised by its large size and semilunate testaceous-red spots at the apex of the elytra. Banks of Ribble. Not uncommon.

"*Bembidium decorum* is easily distinguished by its very elongate form. Banks of Ribble. Rather scarce.

"*Bembidium stomoides.* This species may be recognised by its similarity in form to Stomis pumicatus, whence its name. First introduced into the British Fauna in Dawson's 'Geodephaga Britannica.' Locality, Cumberland. I have taken it on Lytham Sands, and banks of Ribble.

"*Bembidium monticulum.* This species may be separated from any of the green section by its elytra being so very much broader than the thorax, which is small in proportion. Banks of the Ribble; generally distributed.

"*Bembidium affine.* Very closely resembles B. nitidulum, but may be distinguished by its palpi being entirely testaceous, whereas in B. nitidulum the penultimate joint is brown; in B. affine all the joints of the antennæ are longer, the thorax shorter and more square, and the elytra broader and more rounded on the sides. Ribble banks; either scarce or overlooked.

"*Bembidium prasinum.* This species is soon distinguished from B. tibiale by the striæ on the elytra not being punctured, and by its much wider thorax; the legs are also wholly black. Banks of the river Ribble; few specimens captured."

The following paper was then read, by the Author, Mr. B. Cooke:—

### *On Classification.*

"Mr. Dallas, in his 'Elements of Entomology,' after stating his reasons for the adoption of the Cibarian system of classification in his work, says (p. 58), 'But, for my own part, I must confess that I think the adoption of the metamorphosis as the foundation of the arrangement of insects leads to a more philosophical result.' Coinciding with Mr. Dallas in this view, the object I had in the present paper was to carry out this system of arrangement, and to endeavour to show that the orders of insects follow one another in a more natural and regular course than in the system of classification which is founded on the structure of the mouth.

"It struck me, however, that a short review of the subject of classification generally, not merely of insects but of all animated nature, would be an important step in the inquiry. The object of all classifiers has been to arrive at a natural system; and, as Nature is said to be formed on a plan, it seems to me that there ought to be one and the same plan throughout in the arrangement of each class of animated beings. The plan which will be here advocated is simply this,—to begin with the highest development, and proceed in regular gradation to the lowest; to commence each class, each order and subdivision, each family, each genus, with that animal which should hold the highest rank in its respective group; to proceed from the most powerful down to the most defenceless, from the most noble to the meanest;—care being taken to associate together those which have a close affinity throughout the various stages of their existence.

"It is obvious that carnivorous animals, those which prey upon others belonging to the same order as themselves, will possess the highest development; their muscular powers in proportion to their size, their strength of bone and of jaws, and their agility, are all necessarily greater than those of animals which they have to subdue and subsist upon. The predaceous tribes, then, in each class and order, whenever such exist, should be placed at the head. Thus in the Mammalia, the lion, the tiger, the leopard, &c.; in the Birds, the eagles and falcons, will claim the highest rank; and, indeed, such is the position, or nearly so, commonly assigned to them.

"Well, then, having suggested the mode of beginning, which is as much as can conveniently be done in a paper of this kind, let us proceed to examine the adopted arrangements of the orders of Insects inhabiting Britain.

"*Coleoptera*. In the order Coleoptera, our English authors are agreed in commencing with the Geodephaga, and in placing at the head of this tribe the family Cicindelidæ; predaceous beetles, diurnal, with strong jaws, and gifted with superior powers for flying and running. The manner in which the arrangement of this order is carried out is in tolerable accordance with our plan; the principal deviation from it being, in the position assigned to the Staphylinidæ by Stephens.

"*Lepidoptera*. The order Lepidoptera contains no truly predaceous insects; but there is no difference in opinion, in assigning the first rank to the Rhopalocera, at the head of which stand, undoubtedly in their true position, the Papiliones. The other groups follow one another in natural order from the highest to the lowest, the position of the Pyrales being perhaps the most in dispute.

"It appears, then, as if the plan here advocated was the identical plan on which is based the arrangement of the above two orders of insects. Let us, however, examine the remaining orders, and we shall see a variance, unaccountable, perhaps, unless on the supposition that attempts have been made to connect the head of one order with the tail of another; thus destroying the harmony which might otherwise subsist in the arrangement of the component parts of each, and the relative position which these parts or subdivisions might hold, compared with those in the vertebrate animals. Proceeding to the order

"*Hymenoptera*. Stephens, in his 'Catalogue,' commences with the Tenthredinidæ and ends with the Cynipidæ; Curtis in his 'Guide,' Westwood in his 'Modern Classification,' and the British Museum Catalogue, each commence with the Tenthredinidæ and end with the Apidæ; the species of this family which is placed last being the hive-bee. Surely an insect which has commanded the admiration of naturalists in all ages, for its wonderful instinct and economy, and its utility to man in furnishing him with wax and honey, should deserve a higher position than the very bottom of such an extensive order as the Hymenoptera. But we may suppose here that an attempt has been made to reduce to practice the circular system of McLeay, and that the circumference of the circle has been cut between the Apidæ and Tenthredinidæ, so as to allow it to fall into a straight line; but if this be the case, is not any entomologist at liberty, for the purpose of arranging his collection, to cut the circle at any part of the circumference that he pleases? And might not a better starting point be found with the Vespidæ or Formicidæ than with the Tenthredinidæ, which are harmless to other insects?

"*Diptera*. Mr. Walker, in the 'Insecta Britannica,' begins with the Pulicidæ and ends with the Nycteribidæ. This looks something like another attempt at the circular system. Of the family Asilidæ, he says, "These flies are all carnivorous, and are the most powerful and generally the largest of the Diptera: they destroy Coleoptera and Hymenoptera, as well as insects of their own class.' Mr. Walker is a good authority, and if we ought to arrange this order, in conformity with the arrangement of the Coleoptera and Lepidoptera, and with that of the vertebrate animals, we now know where to begin; but it would be just as rational to place a *rat* at the head of the Mammalia, as a domestic nuisance like the *flea* at the head of the Diptera. Stephens divides this order into three: 1st, Diptera; 2nd, Homaloptera, containing the families Hippoboscidæ and Nycteribidæ; and 3rd, Aphaniptera, the single family Pulicidæ. He commences his Diptera with the Culicidæ and concludes with the Muscidæ, placing the genus Lonchopteryx at the end. Curtis and Westwood separate only the Pulicidæ into a distinct order, both, however, placing it first, and ending the Diptera with the Homaloptera of McLeay and Stephens. Comparing their arrangements of the order as restricted by Stephens, both commence with the Culicidæ the same as he does; Curtis ends with the Phoridæ, Westwood with the Œstridæ. In the arrangement of the families and of the genera in the family Muscidæ our authors widely differ.

"*Neuroptera and Trichoptera.* Here Stephens, Curtis and Westwood, agree in making two orders; but in the British Museum Catalogue these are united under the appellation Neuroptera; the insects constituting the Trichoptera of the above authors, being neither placed first nor yet last. Stephens commences the Neuroptera with the Boreidæ and Panorpidæ, and concludes with the Perlidæ. Curtis begins with the Libellulidæ, and ends with the Perlidæ. In Westwood's arrangement the Psocidæ are the first, and the Raphidiidæ the last, of the British families. In the British Museum list, the order including the Trichoptera, is begun with the Psocidæ and terminated with the Perlidæ. If we place at the head of the Neuroptera the most powerful and active of the predaceous insects belonging to it, there can be no difficulty in the selection; Curtis is the only one of our authors who places the dragon-flies in that position.

"*Orthoptera.* The British species belonging to this order are few in number. They may be divided into five families, and arranged thus: Blattidæ, Forficulidæ, Achetidæ, Gryllidæ and Locustidæ. There are two other families which are not British; the Mantidæ, which are predaceous; and the Phasmidæ, which are probably the lowest group of the order. Curtis separates the Forficulidæ and Blattidæ, each into distinct orders; then follow Achetidæ, Gryllidæ and Locustidæ. Stephens and Westwood separate the Forficulidæ only. The latter author agrees with Curtis in the arrangement of the families, whilst Stephens nearly reverses it.

"*Hemiptera.* Stephens begins with the Cimicidæ, and ends with the Notonectidæ. The latter are predaceous insects, and Curtis and Westwood place them at the head of the order: they both terminate it with the Pentatomidæ; but these do not appear to be near the lowest group.

"*Homoptera.* Stephens and Westwood place the Cicadidæ first and the Coccidæ last. Stephens introduces the Thripidæ here, which Westwood places in an order by themselves at a great distance from this. Curtis also introduces the Thripidæ, but, placing the Homoptera before the Hemiptera, he just reverses the position of the families, beginning with the lowest group and ending with the highest.

"Having now taken a cursory review of the commencement and termination of each order, in the adopted methods of arrangement, and seen the great want of some fixed plan applicable to all, let us turn our attention to the relative position to be assigned to the orders themselves, based on the nature of the metamorphosis, progressing in each division from the highest rank to the lowest.

"On this system I shall adopt the classification proposed by Mr. Dallas, with but little other alteration than the sinking of the minor orders.

"The class Insecta, then, will be divided into three sections:—

"I. METABOLA.—Insects undergoing a metamorphosis which is termed complete; the pupa unable to take food, and being for the most part quiescent. This section comprises

Order 1. Coleoptera.
2. Hymenoptera.
3. Diptera.
4. Lepidoptera.
5. Trichoptera.

"II. HEMIMETABOLA.—Metamorphosis semicomplete; the pupa being active and able to feed. This comprises

Order 6. Neuroptera.
7. Orthoptera.
8. Hemiptera.
9. Homoptera.

"III. AMETABOLA.—Without metamorphosis, undergoing only a change of skin; comprising the apterous insects called spring-tails, lice, and bird-lice.

### Section I.

"1. *Coleoptera.* Westwood says, 'This order comprises the extensive tribes of beetles, and, in respect to the size of some of these insects, or the number of individual species, must be regarded as occupying the foremost rank amongst insects.' The pupa is covered by a thin skin, through which the limbs are visible.

"2. *Hymenoptera.* In the preparatory states, and the mandibulated mouth of the perfect insects, this order has a close affinity with the Coleoptera. The larvæ of the Tenthredinidæ, however, make an approach to those of the Lepidoptera.

"3. *Diptera.* As one reason for placing the Diptera next, observe what Westwood says, in speaking of the Hymenoptera: 'It seems to be admitted on all hands that the insects, which are the real analogues of the present order, exist in the Dipterous order, almost every Hymenopterous group having its representative in the latter. Mr. McLeay has also noticed the apodal structure of the larvæ as analogous in both orders.' There are two forms of pupa among the Diptera, the extricated and the obtected; the former most resembles the pupa of the Lepidoptera; in the latter the skin of the larva is not shed, but hardens and forms, as it were, a cocoon. The pupæ of the Culicidæ and Chironomidæ are aquatic and are active; but their movements are not by means of legs, and differ totally from those of the pupæ of insects belonging to the second section.

"4. *Lepidoptera.* The position here given to this order is partly explained above.

There are no predaceous insects among them. Their larvæ differ more on the whole from those of the first and second orders than the larvæ of the Diptera do. The perfect insects are inferior in strength; in the parts of the mouth, and in the legs especially.

"5. *Trichoptera.* In this order I propose to include the following principal groups: 1. Panorpidæ; 2. Raphidiidæ; 3. Hemerobidæ; 4. Sialidæ; 5. Phryganidæ. The term Trichoptera, however, is only partially applicable. Too little is known of the transformations of these groups to rest satisfied in regard to their true position. The pupæ are said to be inactive during the greater period of their existence, but some of them acquire sufficient strength, previous to their change, to creep into a position suitable to effect it.

"In reviewing the above arrangement of the five orders in this section, and taking a general survey of each, there may be observed a gradation from a hard-bodied, strong, and well-defended insect, to a soft-bodied, weak, and defenceless one.

### Section II.

"With regard to the arrangement of the orders in this section, it may perhaps be sufficient to say, that the first and second, the Neuroptera and Orthoptera, are mandibulate, and the other two suctorial. The Neuroptera comprise a wide range of insects; the Libellulidæ being highly predaceous, powerful and active, whilst the Ephemeridæ are short-lived and feeble. The order Homoptera contains several families of insects having a particularly low organisation.

"It remains now to compare the Cibarian system of classification, or that founded on the structure of the mouth, which, having been adopted by our leading English authors, has hitherto obtained general favour in this country. The great objection to this system is, that orders are thereby separated which otherwise have a close relationship. Thus, the Diptera are placed at a distance, more or less remote, from the Hymenoptera; whilst the Hemiptera and Homoptera are separated from the Orthoptera by several orders having little relation to either; the intervention of the Lepidoptera being particularly out of place in a system aiming to be a natural one. Even among the mandibulate section the Hymenoptera are removed to some distance from the Coleoptera, to which they have a closer relationship than the orders that intervene.

"I will not contend that a system of classification founded on the nature of the metamorphosis alone will be perfect; but I maintain that, compared with the Cibarian system, 'it leads,' as Mr. Dallas says, to a more philosophical result.'"

On the conclusion of the paper, the President was requested to leave the chair, when the Rev. Henry H. Higgins was called thereto, and a vote of thanks given by acclamation to the President for his valuable and interesting paper. On the resumption of the chair by the President, a vote of thanks was carried to all the gentlemen who had so handsomely contributed to the pleasure and instruction of the members and visitors present; and it was moved by Mr. McKeonce and seconded by Mr. Cooper, that a special vote of thanks be tendered to Mr. Reading, of Plymouth, for his magnificent and valuable exhibition, sent at a great risk; and to Mr. Constantine, of Blackburn, for his kindness in exhibiting his addition to the Fauna of Lancashire, &c., and for his very useful and interesting, though far too short paper, on "Specific Distinctions."

Mr. Greening observed that he had adopted the President's plan of arrangement in his recent re-arrangement of the insects in [illegible] arrington Museum, to which institution he is Honorary Curator.—*C. S. G.*

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## DUBLIN UNIVERSITY ZOOLOGICAL AND BOTANICAL ASSOCIATION.

*December* 18, 1857.—W. H. HARVEY, M.D., F.L.S., V.P., in the chair.

Dr. M'Donnel read a very elaborate and interesting paper on "The Electric Powers of the Actiniadæ." The species which the author found to develope most electricity was the common smooth anemone (*Actinia Mesembryanthemum*) of our coasts; the galvanascope used was the lumbar nerves of the common frog, and the experiments were conducted with the greatest care. The lumbar vertebræ were carefully detached from the pelvis, which with the limbs were placed on a piece of board floating on the surface of the water, the vertebræ being allowed to hang over the edge. On these being seized by the anemone the legs of the frog were immediately convulsed.

A prolonged discussion on this important paper followed.

Mr. Edwin Birchall read some "Notes on Additions to the Irish Lepidoptera," chiefly taken by himself and Mr. A. G. More in the West of Ireland. These additions, thirty-eight in number, were supplemental to the Rev. Joseph Greene's 'Catalogue of Irish Lepidoptera, published, some three years since, in the 'Proceedings' of the Association. Mr. Birchall exhibited specimens of all the insects enumerated.

The Chairman expressed his opinion of the importance of thus working out our native Fauna, and of the utility that could not but result from having all these additions carefully recorded.

Professor Kinahan read a paper by W. Spence Bate, F.L.S., "On a new British Hippolyte." This prawn had been taken in Moray Firth by the Rev. George Gordon, and had been named by Mr. Spence Bate, H. Gordonii, after its discoverer.

The Rev. Joseph Greene exhibited a fine pair of that very rare moth Deilephila Galii, and a specimen of a hybrid between Smerinthus Populi and S. ocellatus.

The Rev. Professor Haughton exhibited a unique specimen of Euomphalus cristatus, from the University Geological Museum; also a lithograph of it, executed by Mr. Campbell.

J. R. Greene, Professor of Natural History, Queen's College, Cork, read a paper on the present state of our knowledge of the Cælenterata. The author began by alluding to the various changes which have taken place in the classification of the Radiata, and its subdivision into two distinct departments, for one of which the term Cælenterata had been proposed. He next noticed the various structural modifications which these animals present, as shown in the arrangement of the digestive system, the mode of secretion and appearances of the stinging filaments, the form and position of their locomotive organs, &c. He next gave an account of the numerous discoveries which had recently been made in their development, both by British and continental naturalists, illustrating his remarks by a series of diagrams representing some of the most remarkable phases which these forms exhibit, special allusion being made to the reproductive functions as performed in Hydra, Tubularia, Cordylophora, Clava, Eudendrium, Hydractinia, Sertularia, &c.; the production of the so-called Medusoids, and the development of Cydippe, &c. An explanation was then entered into of the laws of development as enunciated by modern physiologists, and their application to the phenomena in question, showing the probability of the existence of relations between the different classes hitherto unsuspected. He next discussed the various opinions entertained by naturalists on these subjects, and concluded by giving an account of the methods proposed for their classification.

The discussion of this paper was postponed until the next Meeting.

William Spence Bate, F.L.S., was proposed for election as a Corresponding Member.

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*Destruction of Rare Birds.*—I regret much to observe, in some late numbers of the 'Zoologist,' records of the destruction—wanton destruction, I cannot help calling it—of several of our rarer birds, and I desire to enter my protest against the same, and to call upon all true lovers of Nature to unite in endeavouring to put a stop to the practice. It is all very well to shoot a single individual of a species you have never seen before, or of which you may wish to preserve a specimen for yourself or a friend, but ruthlessly to destroy every individual of any of our rarer species that can be had "by hook or by crook," deserves the strong reprobation of every true field naturalist. Even supposing the birds so spared did not remain with you, might they not gladden the eyes of some brother ornithologist in another part of the kingdom (or even in a foreign land), and is it not selfish to deprive others of the pleasure of viewing these rarer specimens of Nature? Besides, might not the spared birds breed, and so increase their number? In many cases it would not be difficult to make out a bird one did not know by the aid of a telescope, and thus avoid the necessity of shooting it, and one might even observe its habits, in some measure, with that instrument.—*Archibald Jerdon; Mossburnford, Jedburgh, N.B., December* 14, 1857.

*Birds at Sea.*—On the voyage from Constantinople to Malta, on the 19th of April last, when half-way exactly between the latter place and the Island of Cerigo, the vessel, at daylight, was suddenly surrounded by a number of birds, whose flight was from the southward; they consisted principally of titlarks, in a very exhausted condition, as also of swallows, wheatears, goatsuckers and whinchats. Flights of turtle doves were continually passing, occasionally one or two alighting on the rigging, but apparently not in the least fatigued; high over head a flight of eagles or vultures passed, apparently as little fatigued as rooks returning home in the evening. Now these birds must have traversed at a single flight 270 miles from the African coast, with 250 miles yet before them; and I should have observed before that most of the titlarks, exhausted as they were, left the ship a few hours after their arrival, apparently in a very weak state: how they are enabled thus to perform such a passage is a mystery, for no doubt, without meeting the vessel, their voyage would have been accomplished in safety. On arriving at Malta, quantities of a small description of owl, cuckoos, bee-eaters, quails and doves appeared in the market, all of which must have performed a voyage of about 220 miles. This year again, while shooting in Algeria, in November, I was astonished at the quantity of jack snipes and woodcocks, which must all, to have reached that continent, travelled from the very northernly parts of Europe, none certainly from nearer than Denmark. The house martin, I find, leaves Algeria on the 23rd of October, only ten days earlier than with us, though the difference is about 17 degrees of latitude; but, as I have observed the swallow common at

Alexandria in January, in latitude 31°, I imagine the flight of the swallow from its summer to its winter residence must be about 33° or 2300 miles, as it is numerous in Norway up to latitude 67°. In Algeria I observed large flights of the siskin, goldfinch, brown linnet, green linnet and wagtails, all of which no doubt must have come to winter from the northward. The house sparrow seemed to be extremely common.—*R. Pigot; J.U.S. Club, Charles Street, December* 26, 1857.

*The Great Gray Shrike* (Lanius excubitor) *in Cambridgeshire.*—I have had the good fortune to have sent me no less than three of these rare birds: the first was shot at Haddenham in the winter of 1855-6; the second (male) near Ely, on the 21st of November, 1856; the third (male) in the same locality as the last, on the 25th of December, 1857.—*William Farren, jun.; King's Old Gateway, Cambridge, January* 8, 1858.

*The Great Spotted Woodpecker* (Picus major) *at Welney Wash.*—I have a splendid specimen of this bird, which was shot on the 9th of November, 1857, in a rather strange locality, *viz.* among some osiers on Welney Wash.—*Id.*

*Blackbirds nesting in December.*—Last week a fresh blackbird's nest, with four eggs, was found at Up Park, near here, the seat of Lady Fetherstonhaugh.—*William Henry Hawker; Horndean, Hants, January* 1, 1858.

*The Alpine Accentor* (Accentor alpinus) *near Lewes.*—On the 26th of December last I obtained two specimens of the Alpine accentor, which were shot on the Downs near here: one of them I have had preserved, the other unfortunately being too much injured by the shot. Mr. Yarrell, in his work on 'British Birds,' gives but three instances of this species being killed in England, but probably more may have occurred since the publication of his work, it being not an uncommon bird on the Continent.—*John Porter, jun.; 8, East Street, Lewes.*

*Movements of Swifts and Migratory Birds.*—I observed the swifts last summer later by some days than usual, having seen a good many on the 16th, 17th and 18th of August, no doubt in consequence of the fineness of the weather and the very high temperature. Mr. Orlando Whistlecraft, in his Almanack for 1858, has also mentioned that the house swallows near him, in Suffolk, at the commencement of the summer, forsook their usual habits and built in open places, like the martins; the usual chimneys were not occupied by the house swallow: it is certainly extraordinary by what instinct birds can foresee what sort of weather is to come. Mr. Whistlecraft is a great observer of the changes of the atmosphere, and has kept a journal for thirty-five years. I recommend his Almanack for 1858 to all those who are fond of studying the weather. During the last mild weather I have heard of rooks repairing their nests, as they do in the early part of the spring.—*H. W. Newman; Cheltenham, January* 8, 1858.

*The Glossy Ibis and Yellowlegged Sandpiper killed in Yorkshire.*—On the 18th of November, 1857, a very fine male of the glossy ibis was taken at Misson, near Bawtry, in Yorkshire, which came into the hands of Mr. Hugh Reid, the celebrated bird-stuffer, at Doncaster, and is now in my collection. The only British specimen of the yellowlegged sandpiper (*Totanus flavipes*) figured in Yarrell's 'Supplement' was taken at the same place, and was brought to Mr. Reid: this specimen is in my collection.—*W. M. E. Milner; Nunappleton, Tadcaster, December* 24, 1857.

*Discovery of a living Frog in the solid Rock.* — There is at present to be seen, at Messrs. Sanderson and Sons, George Street, Edinburgh, an extraordinary specimen of Natural History,—a frog which had been discovered alive in freestone rock. A few months ago, while some colliers in the employ of Mr. James Nasmyth (lessee of Dundonald Colliery, in Fife, the property of R. B. Wardlow Ramsay, Esq., of Whitehill) were engaged in taking out the pavement of the seam of coal, which was freestone, they discovered a cavity in which a frog was lying. On touching it the frog jumped about for some time, and a bucket of water being procured it was put into it, and taken to the surface. On reaching it the animal was found to be dead. It was at the depth of forty-five fathoms, or ninety yards from the surface, in a perpendicular line of strata, consisting of alternate layers of coal and freestone, with ironstone, and about four hundred yards from the out crop surface. The frog seems to have much of the same character as the present species. It is very attenuated, which cannot be wondered at considering its domicile for so many ages, its original existence being of course considered contemporaneous with the formation of the freestone rock in which it was contained.—*Caledonian Mercury.* [Ne nimium crede Mercurio.—*Ed.*]

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*Capture of Notidanus griseus, a Shark new to Britain, at Banff.* — It is a pretty well-known fact that the people of this country endeavour to have something extra on their table on New Year's Day, a sort of dainty or rarity as it were. Now, I have something of this sort myself to-day, and with your leave, kind reader, and our esteemed friend Mr. Newman's indulgence, I will just tell you what it is; not that I wish you to tell me what you dine off to-day or any other day: I wish just to show you how I in some measure fare as regards food for the mind; and I dare say when you read my bill you will think, as I do myself, that it is not every one that can boast of such novelties. Well, then, at one corner of the table there is a pretty large basin full of fish-stomachs, some of which appear to be well stuffed with shrimps, whilst from others the fore legs of Gebia deltura, Calocaris M'Andreæ, and some species of Galathea are protruding. In another corner is a basket containing a quantity of old shells, fresh from the sea, and covered with all sorts of stuff, mostly of a marine character, and from the jerking and snapping amongst them I can easily perceive that there are hermits in some of the univalves. In the third corner lies as pretty and as splendid a Homelyn ray (*Raia miraletus*) as ever an ichthyologist set eyes on; this species is said to be rare on the east coast; the present one was taken at Macduff yesterday, and brought here about an hour ago. At the other and last corner sits just as strange and as curious a fish as there exists anywhere out of the sea, namely, myself, scribbling away here. We now come to the centre of the table, and here lies the chief dainty, or king of the feast, weighing nearly four hundred pounds,—a pretty good dish, you will be thinking, for a Lord Mayor's feast; doubtless it would lunch half-a-dozen aldermen; I am sorry to say, however, that it is neither a baron of beef, a mountain of roasted turkeys, nor a pyramid of plum-pudding, but a rather hideous and terrific-looking and somewhat rare monster from the deep, of the shark family. Now, reader, such are the viands that crowd my humble board on New Year's Day. Would you like to dine with me? I dare say not, unless you are an out-and-out naturalist, and then I have no doubt you would find many of my good viands very palatable. But I must tell you something more about this centre dish of mine. I have said that it is a rare one; it is so, in so far that it is entirely new to this quarter, and if I am not mistaken is not to be found in Yarrell; in Gosse, however, I think you will find him, under the name of Notidanus griseus. But I will give you his dimensions as near as I can, with a few words as to his appearance; and if you are in any way versed in these matters you will then in some measure be able to judge for yourself. Well, then, first as to his head: it is in length 1 foot 2½ inches; lower jaw 11 inches; from the head to the dorsal (there is only one) 5 feet 5 inches; from the fore to the back part of the dorsal, which reaches the tail, 11 inches; height of dorsal 7 inches; tail 3½ feet; pectorals 17 inches by 12; ventrals 14 by 5; anal 9 by 5; distance of ventrals from anal 7 inches; breadth of caudal at commencement of tail 6½ inches; this, however, gradually narrows until it reaches within a few inches of the end of the tail, when it again expands to about 5 inches, and then forms a sort of lobe; for about half its length, too, the caudal is very rough and warty. Vent from the mouth 5 feet 9 inches; length from the snout, which is blunt and roundish, to the mouth 7 inches; nostrils to the mouth 4 inches; ditto to the eye 4 inches; circumference of eye 2½ inches by 1¾. The pupil of the eye is of a most beautiful and changing green colour; the iris is of a very deep iron-gray, which with its large size gives the animal a most terrific and appalling look. Spiracles six, the last one opening close to, or rather on the base of, the pectoral. Girth round the head 45 inches; before pectorals 54 inches, behind 55, middle 57; before ventrals 47 inches, behind 32; tail, where broadest, 20 inches, and in shape flat rather than round. Teeth in two rows; those of the upper jaw with three longish and very sharp points; those of the lower jaw, except the centre one, which is wedge-shaped, very much serrated, having each from nine to ten deeply jagged points. Gape from 20 to 24 inches. Colour of the upper parts of an irony or reddish gray, inclining to leadish on the belly. The skin, when stroked downwards appears, and in fact is, perfectly smooth; but reverse the action, and then it feels and becomes remarkably rough and prickly, and very painful to the hand. The ridge of the tail, which is of a flesh-colour, is very thickly set with pretty large, sharp, prickly tubercles, of an oblong form. Now as to his appearance:—At first sight you would almost, if not altogether, take him for a specimen of the fox shark (*Alopias vulpes*); but the broad, pointed tail, in having but one dorsal, and the broad, bull-like head, soon convinces you that he has nothing at all to do with foxy. He was taken on Tuesday last, on a hook baited for haddocks, and landed at a place called Whitehills, about two miles from this. He is to be preserved for the Banff Museum, for which he has been bought.—*Thomas Edward; Banff, January* 1, 1858. PS.—I have just been into the stomach of the Notidanus, where the fishermen who took him assured me that I should find at least one corpse, and perhaps two. This, however, has not been my luck, for it was perfectly empty, save that there were about thirty leech-like worms either moving about on or adhering to the bare walls. These I have secured in a bottle, and as long as the stock lasts I shall be most happy to send specimens to any one who may wish for them, reserving one or two for myself and friends here.—*T. E.; January* 2.

13 AP 58

## *British Geometrina, as arranged and named in M. Guenée's first Volume of the Geometræ of the whole world.*

- URAPTERYX
  - Sambucaria
- EPIONE
  - Verspertaria
  - Apiciaria
  - Advenaria
- RUMIA
  - Cratægata
- VENILIA
  - Maculata
- ANGERONA
  - Prunaria
- METROCAMPA
  - Margaritata
- ELLOPIA
  - Fasciaria
- EURYMENE
  - Dolobraria
- PERICALLIA
  - Syringaria
- SELENIA
  - Illunaria
  - Lunaria
  - Illustraria
- ODONTOPTERA
  - Bidentata
- CROCALLIS
  - Elinguaria
- ENNOMOS
  - Alniaria
  - Tiliaria
  - Fuscantaria
  - Erosaria
  - Angularia
- HIMERA
  - Pennaria
- PHIGALIA
  - Pilosaria
- NYSSIA
  - Zonaria
  - Hispidaria
- BISTON
  - Hirtaria
- AMPHYDASIS
  - Prodromaria
  - Betularia
- HEMEROPHILA
  - Abruptaria
- CLEORA
  - Viduaria
  - Glabraria
  - Lichenaria
- BOARMIA
  - Repandaria
  - Rhomboidaria
  - Abietaria
  - Cinctaria
  - Roboraria
  - Consortaria
- TEPHROSIA
  - Consonaria
  - Crepuscularia
  - Extersaria
  - Punctulata
- GNOPHOS
  - Obscurata
- DASYDIA
  - Obfuscata
- PSODOS
  - Trepidaria
- MNIOPHILA
  - Cineraria
- BOLITOBIA
  - Fuliginaria
- PSEUDOPTERNA
  - Cytisaria
- GEOMETRA
  - Papilionaria
  - Smaragdaria
- NEMORIA
  - Viridata
- IODES
  - Vernaria
  - Lactearia
- PHORODESMA
  - Bajularia
- HEMITHEA
  - Thymiaria
- EPHYRA
  - Poraria
  - Punctaria
  - Trilinearia
  - Omicronaria
  - Orbicularia
  - Pendularia
- HYRIA
  - Auroraria
- ASTHENA
  - Luteata
  - Candidata
  - Sylvata
  - Blomerata
- EUPISTERIA
  - Heparata
- VENUSIA
  - Cambricaria
- ACIDALIA
  - Ochreata
  - Rubricata
  - Scutulata
  - Bisetata
  - Reversata
  - Contiguaria
  - Rusticata
  - Osseata
  - Holosericeata
  - Incanaria
  - Obsoletaria ?
  - Ornata
  - Promutata
  - Straminata
  - Subsericeata
  - Immutata
  - Remutata
  - Commutata
  - Strigilata
  - Imitaria
  - Emutaria
  - Aversata
  - Inornata
  - Dejeneraria
  - Emarginata

Captain Cox will read a most valuable paper on the ravages of Scolytus destructor, at the Meeting of the Entomological Society this evening, February 1. He hopes there will be a full meeting of Members and others who feel an interest in this important subject.

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To Correspondents.—Numerous communications are unavoidably postponed till next month.

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# CONTENTS.

Insects.—Capture of Læmophlæus Clematidis near Gravesend, *J. S. Baly, Esq.*, 5929. Preservation of Colour in Cassidæ, *W. H. L. Walcott, Esq.*, 5929. Myrmelophilous Coleoptera captured in the Neighbourhood of Plymouth, *J. J. Reading, Esq.*, 5929. Occurrence of Chrysomela Banksii in December, *T. Vernon Wollaston, Esq.*, 5930. What there is beneath our Noses, *John Scott, Esq.*, 5930.

Notices of New Books.—'The Insect Hunters,' 5932.

On the Derivation of the English word "Mare," as explained by the Rev. P. H. Newnham, *Thomas Thompson, Esq.*, 5937.

Proceedings of Natural History Collectors in Foreign Countries. — Mr. Louis Frazer, 5939. Note on Mr. Wallace's Travels, *Rev. Arthur Hussey, M.A.*, 5942.

Proceedings of Societies.—Entomological Society, 5943. Northern Entomological Society, 5947. Dublin University Zoological and Botanical Association, 5956.

Birds. — Destruction of Rare Birds, *Archibald Jerdon, Esq.*, 5957. Birds at Sea, *R. Pigot, Esq.*, 5958. The Great Gray Shrike in Cambridgeshire; The Great Spotted Woodpecker at Welney Wash, *William Farren, jun.*, 5958. Blackbirds nesting in December, *Rev. Wm. Henry Hawker, M.A.*, 5958. The Alpine Accentor near Lewes, *John Porter, jun., Esq.*, 5958. Movements of Swifts and Migratory Birds, *H. W. Newman, Esq.*, 5958. The Glossy Ibis and Yellowlegged Sandpiper killed in Yorkshire, *Sir William Milner, Bart., M.P.*, 5958.

Reptiles.—Discovery of a living Frog in the solid Rock, 5959.

Fishes.—Capture of Notidanus griseus, a Shark new to Britain, *Thomas Edward*, 5959.

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## To Egg Collectors.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, London, W.C., on TUESDAY, the 9th day of February, 1858, a COLLECTION of RARE and WELL-AUTHENTICATED EGGS, formed in ALGERIA, by the Rev. H. B. TRISTRAM, containing those of Vultur fulvus, Cathartes percnopterus, Falco fulvus, F. imperialis, F. nævius, F. pennatus, Strix scops, *Cuculus glandarius*, *Sylvia galactodes*, S. orphea, S. luscinoïdes, Alauda brachydactyla, A. cristata, A. calandra, *Hemipodius tachydromus*, Otis houbara, O. tetrax, Glareola pratincola, Ardea garzetta, A. russata, A. ralloïdes, Ibis falcinellus, Himantopus melanopterus, Recurvirostra avocetta, Sterna anglica, S. leucopareïa, Anas rutila, A. strepera, A. nyroca, A. rufina, &c., &c. Catalogues in detail may be had on application to the Auctioneer, as above.

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## Birds' Eggs.

MR. J. C. STEVENS is instructed to announce for Sale by Auction on TUESDAY, the 23rd of February, a COLLECTION of RARE EGGS, made during the past season in LAPLAND, by J. WOLLEY, Esq. It will contain many great rarities. Catalogues are preparing.

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EDWARD NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE, N.E.